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US EPA Great Lakes National Program Office

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Lake Michigan Mass Balance Background

38,146 samples with over 1 million result data points

37 Focus Groups of data

Atrazine

PCBs

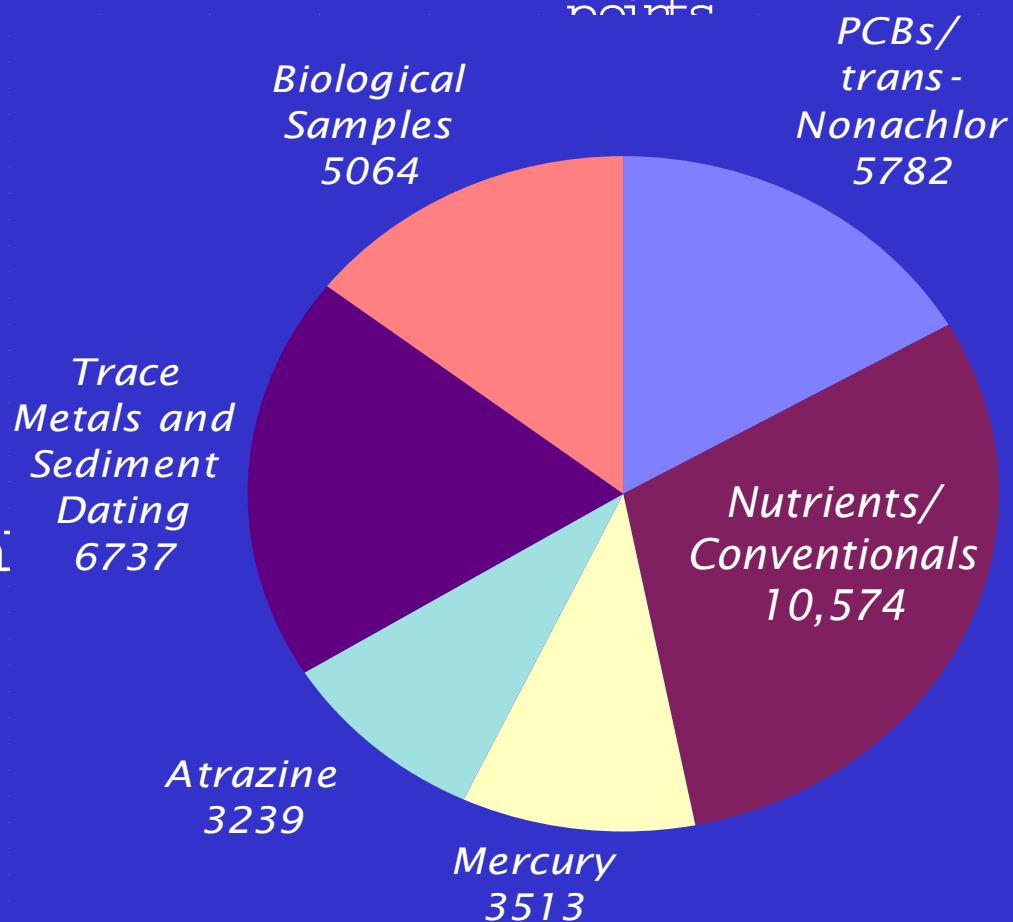
trans-Nonachlor

Mercury

Nutrients/Conventional
s

Biologicals

Metals

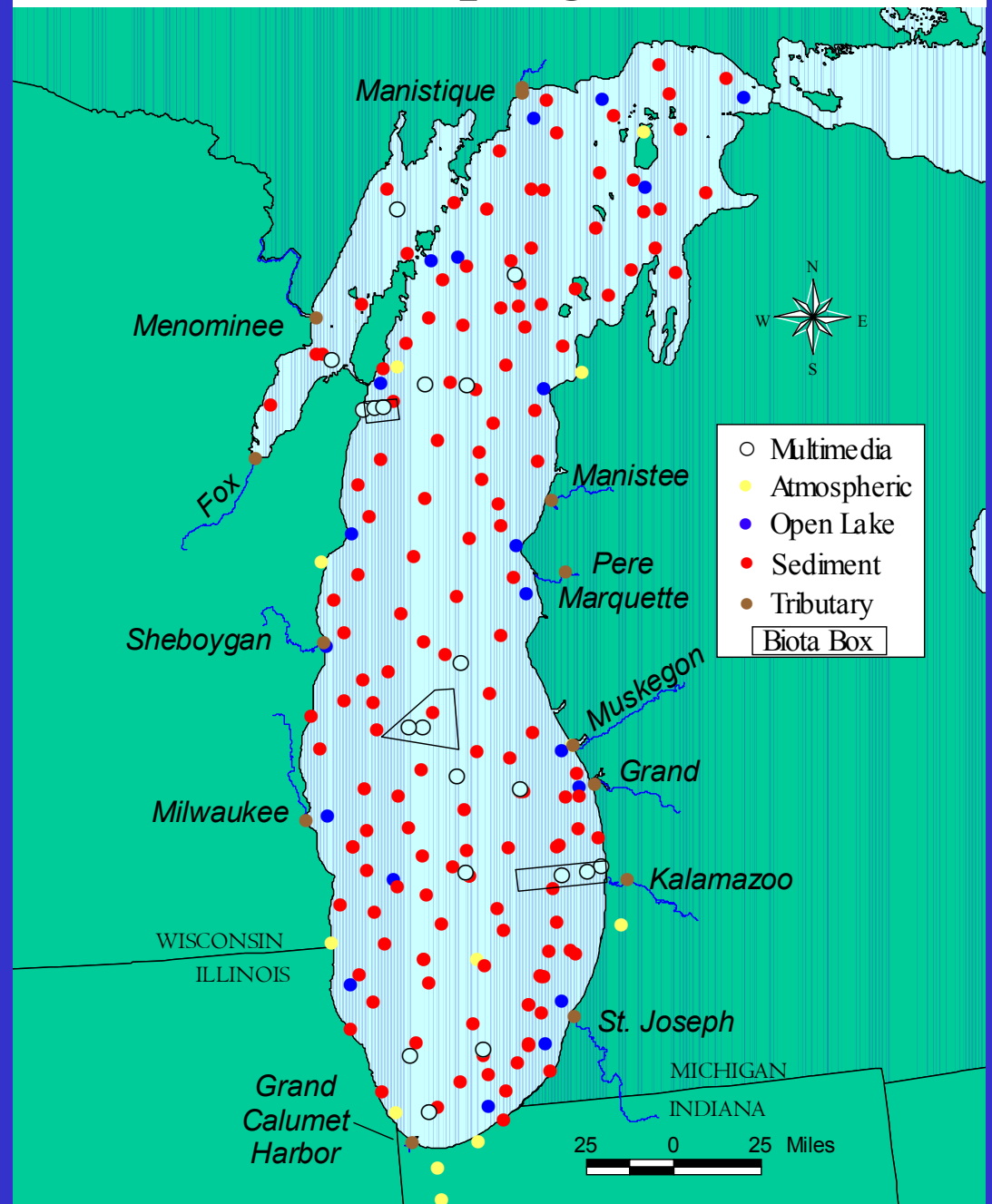


LMMB Stations

Individual
maps:

- Air
- Open Lake
- Sediment
- Tributary
- Biota

LMMB Sampling Stations



Data Coordination

Organizing Electronic Metadata

Metadata codes

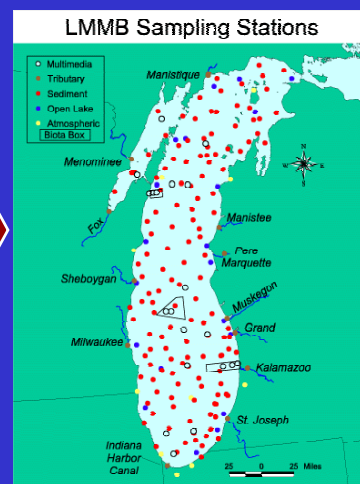
Accurate?
Current?
Available?

**Data Tracking
Releases & Outputs**
Working with Clients
12 Tailored Outputs
(E-mail/FTP/CD)

**Publish
ONLINE**

GIS mapping projects
LMMB, SOLEC '99,
GLNPO WQS, LaMP

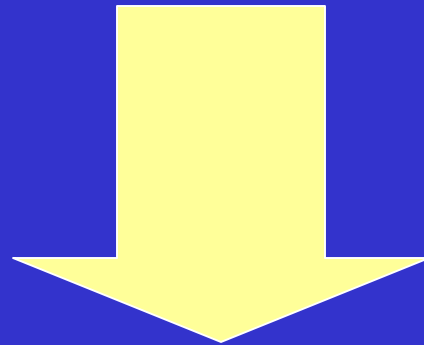
**Publish
ONLINE**



www.glnpo.net/lmmb

How does the quality of GIS affect environmental monitoring efforts?

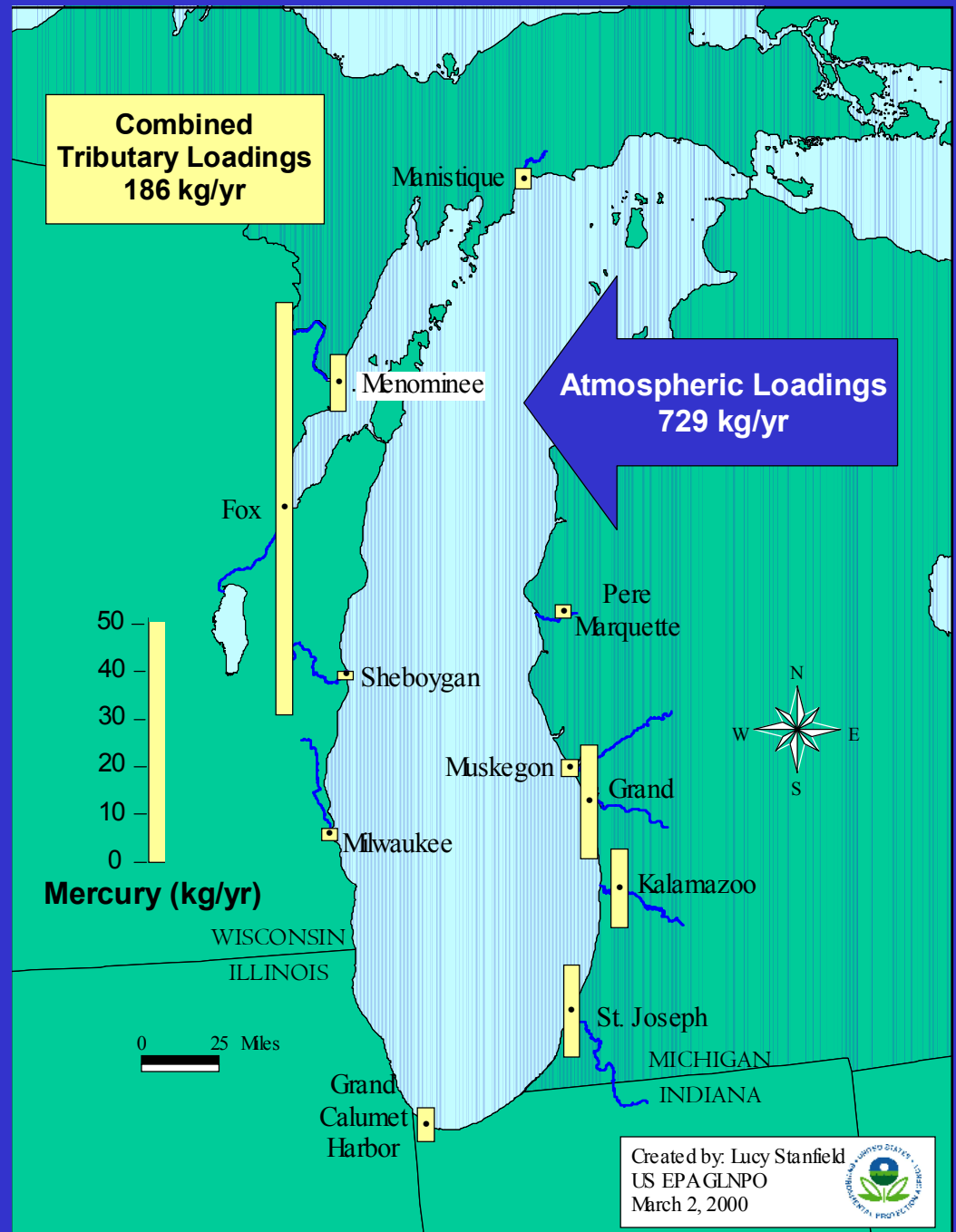
- By updating the original sampling station maps



- Enhanced QA Process
- Access to accurate information
 - Data CD
 - Online

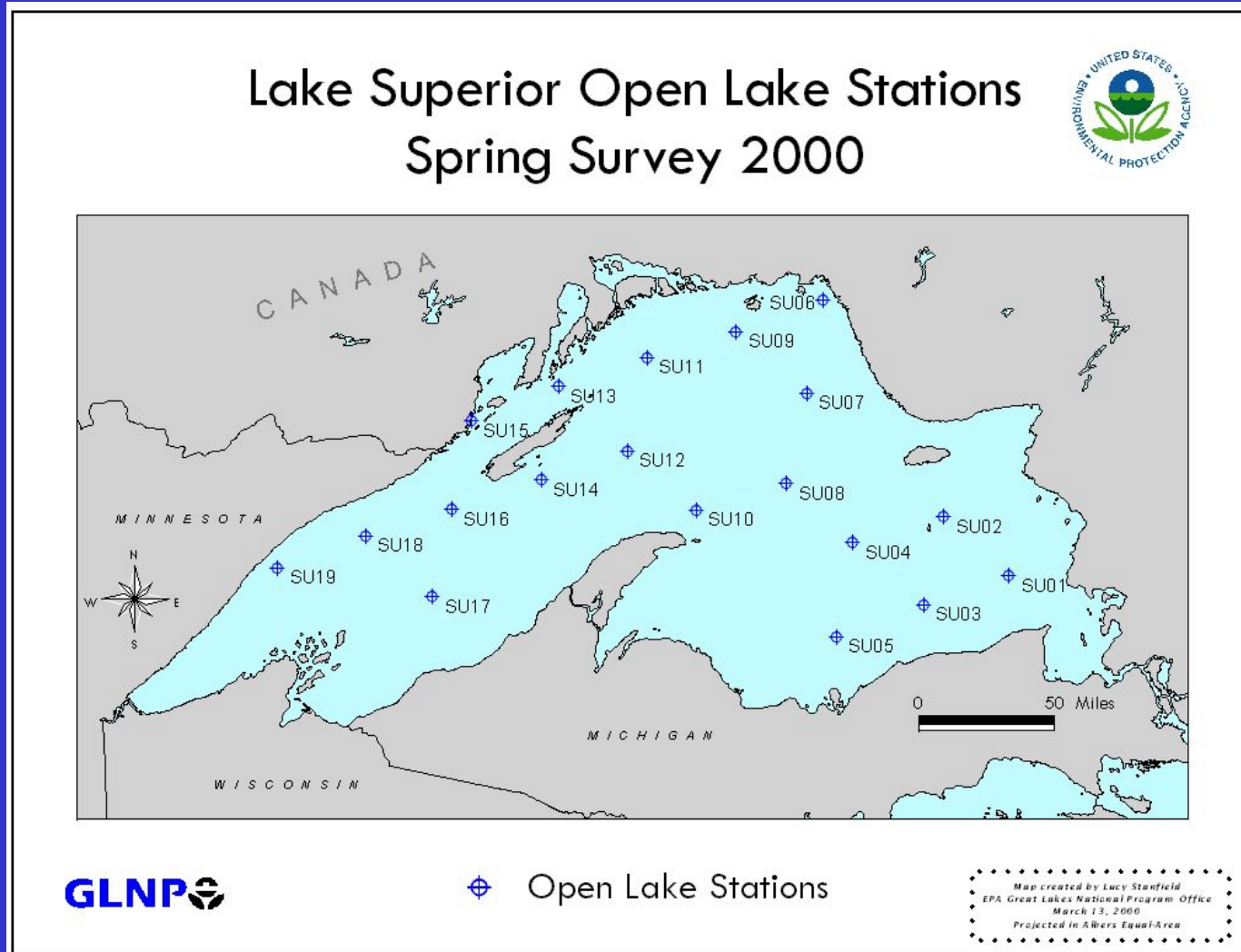
GIS products of known quality

- Visualize environmental conditions on a regional scale
- Communicate information to partners/public
- Plan for future monitoring efforts where trends develop



GIS products of known quality

- Easy reference for ongoing GLNPO



Lessons Learned



- GIS is part of the QA process
- EPA Locational Data Policy
 - Integral part of reporting standard
 - At the project start or as early as possible
- Maps tell a story visually
 - Have a specific purpose & known quality
 - Critical for long-term projects
 - Instantly communicate scope of project
 - Easy to display electronically (webpage, data CD)
- Make QA & metadata resources available electronically



GLNPO – LMMB website:
www.epa.gov/glnpo/lmmb